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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/556,559

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Jacques Villiers

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11/25/2009

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EXAMINER

MAWARI, REDHWAN K

ART UNIT

PAPER NUMBER

3663

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/556,559	<b>Applicant(s)</b> VILLIERS, JACQUES	
	<b>Examiner</b> REDHWAN MAWARI	<b>Art Unit</b> 3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 11 September 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 29-39,43-49 and 52 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 29-39,43-49 and 52 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 January 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

***Response to Amendment***

This Office Action is responsive to Applicant's amendment and request for reconsideration of application 10/556,559 filed on September 11, 2009.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim element "29-39, 43-49, and 52" is a means (or step) plus function limitation that invokes 35 U.S.C. 112, sixth paragraph. However, the written description fails to disclose the corresponding structure, material, or acts for the claimed function. One example, claim 1 recites "means for automatically collecting, transmitting, selecting potential conflicts, etc.." however there is no detail information about the means to accomplish structure to satisfy the requirement of 112, 1st paragraph

Applicant is required to:

(a) Amend the claim so that the claim limitation will no longer be a means (or step) plus function limitation under 35 U.S.C. 112, sixth paragraph; or

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(b) Amend the written description of the specification such that it expressly recites what structure, material, or acts perform the claimed function without introducing any new matter (35 U.S.C. 132(a)).

If applicant is of the opinion that the written description of the specification already implicitly or inherently discloses the corresponding structure, material, or acts so that one of ordinary skill in the art would recognize what structure, material, or acts perform the claimed function, applicant is required to clarify the record by either:

(a) Amending the written description of the specification such that it expressly recites the corresponding structure, material, or acts for performing the claimed function and clearly links or associates the structure, material, or acts to the claimed function, without introducing any new matter (35 U.S.C. 132(a)); or

(b) Stating on the record what the corresponding structure, material, or acts, which are implicitly or inherently set forth in the written description of the specification, perform the claimed function. For more information, see 37 CFR 1.75(d) and MPEP §§ 608.01(o) and 2181.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

a. Claims 29 and 52 recite the phrase “can be” which renders the subsequent limitation as an optional limitation and therefore such limitation render the claim vague and indefinite.

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- b. Claims 29 and 52 recite the phrase “the fuzziness of the controller’s vision and subliminal to the controller”. Set forth phrase is unclear and renders the claim vague and indefinite. It is unclear what is meant by said limitation.
- c. Claim 32 recites the phrase “could”. Set forth phrase is unclear and renders the claim vague and indefinite. It is unclear what is meant by said limitation. Applicant must verify all claims do not include phrases such as “can” or “could”.
- d. For that reasons, claims 29-39, 43-49, and 52 are rejected.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 29-39, 43-49 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kirk (6,604,044) in view of Choate (5,212,804) and Farahat (5,961,568).

Consider claim 29, Kirk discloses a device for automated evolutionary assistance to air traffic controllers including a computer including having a

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software program permitting the receipt of data for equipping an air traffic control system including flight plans of; it would have been obvious that a radar is utilized in an aircraft environment; however the examiner introduces a secondary reference for more clarification;

Farahat teaches aircraft and Radars (see at least FIG. 1);

Kirk discloses and elaborating and displaying them to air traffic controllers (see at least col. 3, lines 40-45); it would have been obvious to an ordinary skilled person in the art that the controller and the aircraft have a radio communication establishing a data link communication; however the examiner introduces a secondary reference;

Choate teaches the controllers having a radiotelephony link for communicating with the aircraft, the device comprising: -means for establishing a data-link with the aircraft (see at least FIG. 1);

-means for establishing and updating a computer agenda, which is a list of the aircrafts' conflicts, of potential conflicts on the basis of all the information and computation means of the computer (see at least col. 3, lines 1-10);

-means for automatically collecting, via said data-link, in on-board aircraft computers, complementary data for establishing said computer agenda ();

-means for selecting potential conflicts on crossing trajectories which can be solved by modification(s) of aircraft speed, climbing or descending rates, lateral shift of route, said modification(s) being so minor as to not interfere with current

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controllers' decision making processes (see at least col. 3, lines 20-29, and col. 3, lines 30-40);

As best understood by the examiner, Kirk discloses means for automatically transmitting said modification(s) of flight parameters via said data-link to selected aircraft and without the controllers' prior agreement when said modifications of flight parameters staying within limits of the fuzziness of the controllers' vision and thereby being-are "subliminal" to the controllers; and  
-means for executing said modifications by automating means in said selected Aircraft (see at least abstract, wherein the resolution is generated automatically, i.e. without the controller prior agreement, and given an evaluation of required separation between the aircraft and airspace, i.e. stay within a computer fuzziness of the controller's vision).

Accordingly, it would have been obvious to an ordinary skilled person in the art at the time of the invention to modify the invention of Kirk to include the invention of Choate, radio telephony link, for the purpose of allocating communication channels to most efficient use the available radio spectrum among all the aircrafts.

Accordingly, it would have been obvious to an ordinary skilled person in the art at the time of the invention to modify the invention of Kirk to include the invention of Farahat, radar, for the purpose of improving the accuracy of the parameters under the aircraft coverage area.

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Alternatively claims 29-39, 43-49 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Erzberger (6,314,362) in view of Choate (5,212,804) and Farahat (5,961,568).

Erzberger discloses a device for automated evolutionary assistance to air traffic controllers including a computer including having a software program permitting the receipt of data for equipping an air traffic control system including flight plans of aircraft;

it would have been obvious that a radar is utilized in an aircraft environment; however the examiner introduces a secondary reference for more clarification;

Farahat teaches aircraft and Radars (see at least FIG. 1);

Erzberger discloses displaying them to air traffic controllers (see at abstract, wherein the ATC find the aircrafts flying on inefficient routes, and determines new routes and display them on a display); it would have been obvious to an ordinary skilled person in the art that the controller and the aircraft have a radio communication establishing a data link communication; however the examiner introduces a secondary reference;

Choate teaches the controllers having a radiotelephony link for communicating with the aircraft, the device comprising: -means for establishing a data-link with the aircraft (see at least FIG. 1);

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- means for establishing and updating a computer agenda, which is a list of the aircrafts' conflicts, of potential conflicts on the basis of all the information and computation means of the computer (see at least FIG. 3);

- means for automatically collecting, via said data-link, in on-board aircraft computers, complementary data for establishing said computer agenda (see at least FIG. 33);

- means for selecting potential conflicts on crossing trajectories which can be solved by modification(s) of aircraft speed, climbing or descending rates, lateral shift of route, said modification(s) being so minor as to not interfere with current controllers' decision making processes (see at least col. 5, lines 6-25);

As best understood by the examiner, Kirk discloses means for automatically transmitting said modification(s) of flight parameters via said data-link to selected aircraft and without the controllers' prior agreement when said modifications of flight parameters staying within limits of the fuzziness of the controllers' vision and thereby being-are "subliminal" to the controllers; and

- means for executing said modifications by automating means in said selected Aircraft (see at least col. 6, lines 1-16, wherein the automation is performed within certain limits).

Accordingly, it would have been obvious to an ordinary skilled person in the art at the time of the invention to modify the invention of Erzberger to include the invention of Choate, radio telephony link, for the purpose of allocating

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communication channels to most efficient use the available radio spectrum among all the aircrafts.

Accordingly, it would have been obvious to an ordinary skilled person in the art at the time of the invention to modify the invention of Erzberger to include the invention of Farahat, radar, for the purpose of improving the accuracy of the parameters under the aircraft coverage area.

Consider claim 30, Kirk discloses further including means for elaborating optimal solutions to other potential conflicts figuring in said computer agenda (see at least abstract); furthermore, see at least Erzberger, col. 11, lines 54-61).

Consider claim 31, Erzberger teaches further including means for determining in real time among conflicts within said controllers' agenda those which are false conflicts and displaying the false conflicts on a display of a sector in charge of implied aircraft (see at least col. 12, lines 1-7).

Consider claim 32, Erzberger teaches further including means for updating potential conflicts into said computer agenda even before implied aircraft have entered in a control sector in which the conflict could happen (see at least col. 9, lines 7-26).

Consider claim 33, Kirk discloses further including means for selecting in said computer agenda particularly sensitive conflicts that lead to the occurrence of conflict clusters that are difficult to solve (see at least col. 11, lines 1-52); furthermore, see at least Erzberger (at least col. 10 lines 20-36).

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Consider claim 34, Erzberger teaches further including means for proposing solution(s) for avoiding such occurrence on a display screen of controllers presently in charge of the aircraft when said conflicts only occur in a following sector (see at least col. 10, lines 20-51).

Consider claim 35, Kirk discloses further including means for proposing to controllers, transfer conditions of an aircraft to a following sector (see at least col. 3, lines 20-29, and col. 3, lines 30-40); and furthermore, Erzberger (see at least col. 10, lines 20-36).

Consider claim 36, Erzberger teaches further including means for displaying to controllers' icons in bi-univocal relationship with aircraft pairs on said controllers' agenda, said icons serving as a virtual keyboard for addressing in return specific messages to the computer concerning said aircraft pairs (see at least col. 8, lines 53-67).

Consider claim 37, Erzberger teaches further including means for displaying the aircraft pairs of said controller agenda, a specific icon that makes displaying the virtual keyboard specifically adapted to the situation when designated by the controllers (see at least col. 8, lines 53-67).

Consider claim 38, Erzberger teaches including means for displaying on said controllers' agenda an icon that indicates the controllers' desire to know the solution(s) elaborated by the computer and means for informing said computer of the chosen solution when designated by controllers or assistant controllers (see at least col. 8, lines 53-67).

Consider claim 39, Farahat teaches further including means for automatically transferring the chosen solution to concerned aircraft for execution (see at least Farahat abstract).

Consider claim 43, Farahat teaches further including means for elaborating a display making appear each aircraft pair in potential conflict on the form of a point and of its speed vector, the coordinates of said point being respectively the delay between the present moment and the moment when said aircraft pairs will have a minimum longitudinal separation, and in coordinates the separation distance at this moment (see at least Farahat abstract).

Consider claim 44, Erzberger discloses wherein said device is further arranged for associating a label providing any necessary data concerning the aircraft with the point representing the aircraft pair (see at least Erzberger col. 11, lines 45-55).

Consider claim 45, Erzberger discloses wherein said device is further arranged for associating an indicator giving their vertical separation when their horizontal separation will be minimum with the point representing the aircraft pair (see at least Erzberger col. 8, lines 5-35).

Consider claim 46, Erzberger discloses wherein a designation by a controller of an aircraft on any display screen makes the aircraft and an aircraft conflicting with it appear on other display screens (see at least Erzberger col. 10, lines 21-37, FIG. 5).

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Consider claim 47, Erzberger discloses further including means for receiving from said aircraft data confirming the proper execution of instructions (see at least abstract, wherein click and send is construed as confirmation).

Consider claim 48, Farahat teaches including means for sending a message to two conflicting aircraft for sub-delegating to the conflicting aircraft the responsibility of insuring their safe separation by their own means according to clearances defined by said device and chosen among a set of possible conflict resolution manoeuvres (see at least Farahat col. 3, lines 28-34).

Consider claim 49, Erzberger discloses including means for insuring automatic display of the delegated conflict, so that said controllers' agenda provides a permanent monitoring board displaying a list of the delegated conflicts and a list of potential conflicts still to be solved (see at least Erzberger col. 2, lines 36-50, col.5, lines 7-15).

Consider claim 52, claim 52 is rejected using the same art and rationale used to reject claim 1.

### ***Response to Arguments***

Applicant's arguments have been fully considered but are not persuasive. In particular the applicant argues:

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A) Erzberger system does not automatically modify the flight parameters as recited in new claim 29. Instead, the air traffic controllers must read and analyze the information displayed to them and then act accordingly. Thus, the system in Erzberger requires air traffic controllers to take some action (i.e., non-subliminal) before an aircraft's flight plan or route is modified.

B) Farahat fails to teach or suggest automatically transmitting modifications to flight parameters to aircrafts that are "subliminal" to traffic controllers.

In response to A) examiner respectfully disagrees. Applicant is reminded that claims must be given their broadest reasonable interpretation. Given the broadest interpretation, as claimed it is the examiner's position, the reference of record teaches what he is argued. The limitation applicant recited in claim 29 and 52 is vague and indefinite and therefore renders the breadth of the claim vague and indefinite. As best understood by the examiner, see at least abstract, wherein the resolution is generated automatically, i.e. without the controller prior agreement, and given an evaluation of required separation between the aircraft and airspace, i.e. stay within a computer fuzziness of the controller's vision).

In response to argument B), examiner respectfully disagrees. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Redhwan Mawari whose telephone number is 571 270 1535. The examiner can normally be reached on 7:30 AM - 5PM Mon-Fri Eastern Alt Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached at 571-272 6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

11/09/2009

Redhwan Mawari

/R. M./

Examiner, Art Unit 3663

/Tuan C To/  
Primary Examiner  
November 23, 2009